AMENDMENTS TO THE SPECIFICATION

Please amend the title of the application to read as follows:

DYNAMIC PERFORMANCE MEASURES FOR CEMENT PRODUCTION PROCESSES

Please amend page 1, line 4 of the specification to add the following paragraph:

CLAIM OF PRIORITY

A1 This application claims priority to U.S. Patent Application Serial No. 60/235,491, filed on September 26, 2000, the contents of which are herein incorporated by reference in their entirety.

Please replace the paragraph beginning on page 16, line 23 and ending on page 17, line 23 with the following paragraph:

A2 For the illustrative system of FIG. 1, the kiln sensors can provide measurements including kiln feed, temperature measurements at the input and output of the preheater stages, water content at the preheater stages, oxygen and carbon-monoxide, cooling fan rotation and power (current, voltage, etc.), coal feed and BTUs, secondary air temperature, cooler vent temperature, clinker temperature in the cooling area, oil flow, fan speed, damper, etc., and such measurements are provided for illustration and not limitation. Those with ordinary skill in the art will recognize that the invention herein is not limited to the sensors, the sensor arrangement, or the format of the sensor input or output. Any sensor or sensor measurement that can be incorporated into a clinker production factor or a cost per ton of clinker according to Equations (1) and (3) herein is within the scope of the invention. Additionally, system variables, including for example, stack particulates and residual carbonate, although not measured directly, can be inferred using a non-linear modeling technique based on neural networks. Multivariable control can be implemented to control the process (e.g., kiln) by comparing measured temperatures to theoretical or ideal temperatures and automatically making the necessary adjustments. For example, a multivariable control system such as the ~~Connisseur~~ CONNISSEUR ® System by Invensys Systems, Inc., can utilize neural networks and/or fuzzy logic, although the invention herein is not limited to such embodiments.

Please replace the paragraph beginning on page 22, line 17 and ending on page 24, line 2 with the following paragraph:

A3 Referring now to FIG. 4, there is shown an illustrative system **40** that can be implemented in a cement production manufacturing process such as the system of FIG. 1, can further provide for implementation of DPMs as provided herein, and is known as the I/A ~~Series~~ SERIES ® system from Invensys Systems, Inc. As is well-known, the I/A ~~Series~~ SERIES ® system includes I/O Modules **42** such as the FBM44 modules, wherein the I/O Modules **42** can interface to a Fieldbus **43** and hence to a Control Processor **44** such as the I/A ~~Series~~ SERIES ®

CP40B. Data from sensors **46** can be transferred to the I/O modules **42** using a transmitter, wherein the I/O Modules **42** can convert the sensor data to a format compatible with the Control Processor **44**. In one embodiment of the system, the Control Processor **44** can include at least one processor that includes instructions for causing the processor to implement control algorithms. The Control Processor **44** can further include instructions for implementing DPMs such as those provided herein by Equations (1) through (6). As shown for the FIG. 4 system, the Control Processor **44** can interface to Workstations **48** through an I/A ~~Series~~ SERIES ® Nodebus **50** that can be compatible with Ethernet. The Workstations can be, for example, the I/A ~~Series~~ SERIES ® system AW51E that or any other system that provides the functionality described herein. The Workstations **48** can allow for the display of data such as that according to FIGs. 3A-3D herein to allow a processor engineer, manufacturing personnel, etc., to monitor and/or affect the controlled systems. The illustrated Workstations **48** can further interface to another Ethernet **52** that provides an interface to, for example, a corporate network that can be equipped with other Workstations **54**, Personal Computers (PCs), etc., that can also have instructions for causing the display of DPM and/or other information to management or other entities. Historic information can also be provided to such systems **54** for local retrieval and analysis.

Please replace the paragraph beginning on page 24, line 3 and ending on page 24, line 12 with the following paragraph:

Returning to the Control Processor **44** of FIG. 4, depending upon the control algorithms, DPM computations, and any integration therein, the Control Processor **44** can be equipped to transfer control data to, for example, the valves or sensors **46** via the I/O Modules **42** to achieve specified control objectives. In one embodiment, the control objectives can be pre-programmed using a multivariable control system such as the Foxboro ~~Connisseur~~ CONNISSEUR ® system, however in other embodiments, manufacturing or other process system adjustments can be made manually or through the I/A ~~Series~~ SERIES ® Workstations **48**.